Amendments to the Specification

Please replace paragraph [0102] as filed or [0104] as published with the following amended paragraph:

Figure 7b is a diagram of the preferred system for generating dynamic forward error correction on a per data segment basis. The process begins when a sending network node 140 wants to send segment data 1 754. Segment data 1 754 is passed to the dynamic forward error correction code/preamble encoder 751 for processing. The dynamic forward error correction code/preamble encoder 751 keeps track of received CRC errors 752 and the data segment 1 length 771. Network conditions such as CRC errors and other network conditions such as forward error correction errors, parity errors, checksum errors, and the like can be used as input to determine the forward error correction mechanism and/or size. This information is used to select which type and/or amount of forward error correction will be used. For example, if there are very few CRC errors, the amount of forward error correction can be reduced, thus allowing for more efficient sending of data across the network 142. In figure 7b, forward error correction ~~mechanism~~ method 1 757 has been selected. Forward error correction ~~mechanism~~ method 2 and its associated preamble 759 may be selected for the next segment if needed. Segment data 1 754 is passed to forward error correction ~~mechanism~~ method 1 for encoding. The encoded data segment 1 762 is multiplexed by FEC 1 mux along with preamble 1 756 so the segment data 1 762 can be sent by the sending network node 140 across the network 142 to the receiving

network node 141. The encoded data 762 and the preamble 1 756 are passed from the receiving network node 141 to the dynamic forward error correction code/preamble decoder 765. The preamble mux 769 detects preamble 1, strips off preamble 1 769 and routs the encoded segment data 1 762 to the correct forward error correction mechanism. In this example, forward error correction ~~mechanism~~ method 1 767 is to be decoded. After the segment data 1 754 is decoded, the segment data 1 754 is passed to the receive segment mux 766 for routing to the receiving network node 141. The receiving network node can process segment data 1 754 further.

Please replace the paragraph under the heading "Abstract" with the following amended paragraph:

A data networking system designed to provide efficient, yet reliable, transportation of data across a time division multiplexed network. This invention allows for redundantly sending data segments wherein if bad data segments are received, they can be resent ~~and resending of segments~~ in a dynamic manner depending on the network condition. ~~In addition,~~ and segments can be ~~are~~ fragmented, resized and sent with low overhead due to dynamic header sizes, segment sizes, forward error correction, and cyclic redundancy checks. The result is a very adaptive network that meets the demanding requirements of networks such as power line and wireless while still being able to transport data for voice, audio, video, computer, control, and the like.